

CLAIMS

What is claimed is:

1. A method for use with a geographic positioning receiver and a digital image recording device for matching geographic information recorded by the geographic 5 positioning receiver with images recorded by the digital image recording device, said method comprising the steps of:

recording geographic information during the time that an image is recorded;

determining a first time that at least one digital image was recorded by the digital image recording device;

10 determining the geographic information recorded by the geographic positioning receiver at the first time; and

automatically matching the geographic information recorded at the first time with the image recorded at the first time.

15 2. The method of claim 1, wherein said digital image recording device automatically records a first relative time when said digital image recording device records an image,

wherein said step of determining a first time, further includes a step of determining a time stamp for an image recorded by the digital image recording device.

3. The method of claim 1, wherein the geographic positioning receiver tracks a second relative time when geographic information is recorded;

wherein said step of determining the geographic information, further includes a step of using a second relative time when geographic information is recorded by the  
5 geographic positioning receiver.

4. The method of claim 1, further comprising the step of:

determining a time offset between the first time that at least one digital image was recorded and the time geographic information was recorded.

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5. The method of claim 4, wherein the geographic positioning receiver includes a visual display indicating the relative time being tracked by the geographic positioning receiver;

15 wherein said step of determining a time offset, further includes a step of using the digital image recording device to record an image of the visual display of the geographic positioning receiver.

6. The method of claim 4, wherein said step of determining an time offset, further includes a step of using an image of a UTC display recorded with the image  
20 recording device.

7. The method of claim 4, wherein said step of determining a time offset, further includes a step of using at least one image recorded using the digital image recording device.

5 8. The method of claim 4, wherein said step of determining a time offset, further includes a step of interpolating between GPS epochs in the GPS log file.

9. The method of claim 1 further comprising the steps of:

10 synchronizing the image recording device's clock data with the GPS receiver's clock data.

15 10. A method for matching a digital representation of an image with information including a geographic location of said image, the method comprising the steps of:

15 (a) recording one or more images of a desired field of view;

(b) recording information including a geographic location of said one or more images;

(c) creating an association of each said one or more images with a respective said information including a geographic location of said one or more images; and

(d) outputting a result representing a closest pairing of each said one or more images with a respective said information including a geographic location of said one or more images.

11. The method according to claim 10, further including the step of matching geographic location information with each digital representation of an image in a wireless operation.

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12. The method according to claim 10, wherein said information further includes longitude and latitude information corresponding to a current geographic location of a positioning device.

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13. The method according to claim 10, wherein said information further includes time information corresponding to a current geographic location of a positioning device.

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14. The method according to claim 10, wherein the step of creating an association, further includes a step of associating each said one or more images with at least one of a closest recording time, a closest recorded time before said one or more images were taken, and a closest time after said one or more images were taken.

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15. The method according to claim 10, wherein the step of creating an association, further includes a step of at least one of calibrating and calculating a time offset of an image recording device used to record said one or more images.

16. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of setting the image recording device's clock to match a world standard time.

5 17. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of determining an offset of the image recording device's clock time.

10 18. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of determining an offset of the time each image was created with respect to a world standard time.

15 19. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of directly measuring a difference between a free-running clock of an image recording device and a world standard time.

20. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of recording, over time, multiple measurements of an image recording device's clock time offset.

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21. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of creating a calibration image.

22. The method according to claim 15, wherein said step of at least one or calibrating and calculating, further includes a step of performing optical character recognition.

5 23. The method according to claim 10, further including a step of pairing an image with geographic location information substantially corresponding to said image despite an error in geographic position recorded when said image was recorded.

10 24. The method according to claim 10, further including a step of pairing an image with geographic location information substantially corresponding to said image despite an error in time recorded when said image was recorded.

15 25. The method according to claim 10, further including a step of position tagging each image with a location indicator closest in time to when said image was recorded.

20 26. The method according to claim 25, wherein said location indicator is at least one of maintained in a separate file associated with a corresponding image file and configured for insertion into each image file.

27. The method according to claim 10, further including a step of time matching each image to geographic location information recorded by a positioning device.

28. The method according to claim 10, further including a step of interpolating between one or more location indicators in a location indicator file in order to obtain a best location information for an image taken at a time not represented in said location  
5 indicator file.

29. In a method for matching a recorded image with geographic data substantially corresponding to a geographic location where said image was recorded, one or more electronic devices comprising a data processor performing the steps of:

10 (a) recording one or more images;  
(b) recording geographic data substantially corresponding to each image;  
(c) position tagging each image with a location indicator, of said geographic data, substantially closest in time to when each image was recorded; and  
(d) matching a time of recording of each image with said location indicator recorded substantially closest in time to when each image was recorded, in  
15 order to determine a geographic location of an electronic positioning device at a time or closest in time to when each image was recorded; and  
(e) outputting a matched result.